

Mapping Habitat Distributions of Desert Rare Plants

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Fact Sheet

The Issue

Reliable forms of energy sources in the United States are becoming more important, and identifying and developing clean, green energy from renewable sources—such as sunlight, wind, hydropower, and geothermal heat—is crucial. California's goal is to have at least 33 percent of electricity demand provided with renewable energy by 2020. Large-scale solar developments are essential to achieving this goal. Such developments, however, have large land and water requirements that can have negative impacts on ecosystems and vulnerable species, especially in the desert.

Currently, the habitat distributions of many California desert rare plants are poorly understood and not well-documented. Improved distribution and habitat data collection, modeling, and field testing of models are required. These activities will help identify habitat areas beyond those places where rare plants are currently known to exist, guide rare plant habitat preservation decisions, and improve environmental analyses related to renewable energy development.

Project Description

This project will offer comprehensive information on the distribution and suitable habitat of rare plant species of conservation concern. The analysis will provide a method and an assessment of the accuracy and potential usefulness of habitat suitability models for rare



Desert pincushion (*Coryphantha chlorantha*) is a Mojave Desert rare plant threatened by solar energy development.

Image Credit: Amber Swanson, California Native Plant Society

plant conservation. The research will also be useful in mitigation planning for minimizing the impacts of projects in the California desert.

The project's goals are to:

- Create new distribution maps for rare plant species and improve predictions for potential habitat by integrating new plant specimen and field data plus additional sources of location data with a rigorous habitat suitability modeling approach.
- Conduct field surveys to validate and improve preliminary models.

- Generate new, accurate coordinate data that can be mapped, exported, and viewed online for 12,000 Mojave and Colorado Desert rare plant specimens.
- Make the digital plant location data available online within the first year of the project, which will allow it to be readily shared and used in desert planning and siting.

PIER Program Objectives and Anticipated Benefits for California

Research will provide information and guidance that helps minimize the biological impacts of solar projects in the Mojave and Colorado Desert regions. Desert rare plant information is needed for resource management and to improve the planning tools used in the siting, design, permitting, and mitigation of solar energy projects. This project will contribute to state and federal conservation goals while facilitating the timely permitting of renewable energy projects in California's desert regions. This research will help protect the state's fragile desert ecosystems while helping to implement solar energy projects.

As California's energy demand continues to increase, seeking alternative sources of renewable energy is vital. This project will help ensure that stable, secure, and reliable sources of energy can continue to be provided to California residents in an environmentally responsible manner.

Project Specifics

Contract Number: 500-10-017

Contractor: UC Davis

Contract Amount: \$580,907

Contract Term: October 2010 to June 2013

For more information, please contact:

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